Reference:

Altschul, Stephen F., Thomas L. Madden, Alejandro A. Schäffer, Jinghui Zhang, Zheng Zhang, Webb Miller, and David J. Lipman (1997), "Gapped BLAST and PSI-BLAST: a new generation of protein database search programs", Nucleic Acids Res. 25:3389-3402.

RID: 1006356104-14842-14592

Query=

(131 letters)

Database: nr

799,241 sequences; 254,026,857 total letters

If you have any problems or questions with the results of this search please refer to the ${\tt BLAST\ FAQs}$

Taxonomy reports

Distribution of 20 Blast Hits on the Query Sequence

Mouse-over to show defline and scores. Click to show alignments

Color Key for Alignment Scores

40 40-50 50-80 30-200

1 00 50 100

Sequences producing significant alignments:	Sco: (bi	
gi 7528274 gb AAF63204.1 AF244915_1 (AF244915) interleukin gi 14573528 gb AAK68108.1 AF385625_1 (AF385625) interleukin gi 2905620 gb AAC03535.1 (AF043334) interleukin 13 precurs gi 4504645 ref NP_002179.1 (NM_002188) interleukin 13 [Hom gi 2144691 pir A47481 interleukin-13 precursor - human >gi	179 169 169	1e-64 4e-45 4e-42 5e-42 1e-41

```
gi | 7387804 | sp | Q9XSV9 | IL13 BOVIN INTERLEUKIN-13 PRECURSOR (1...
                                                                    161 8e-40
gi|1127548|gb|AAA83738.1| (U10307) interleukin 13 [Homo sap...
                                                                    160
                                                                        1e-39
gi|4558814|gb|AAD22748.1|AF072807_1 (AF072807) interleukin-...
                                                                    146 3e-35
gi | 6680403 | ref | NP_032381.1 | (NM_008355) interleukin 13 [Mus...
                                                                    143 3e-34
gi | 14719448 | pdb | 1GA3 | A Chain A, Nmr Structure Of Interleuki...
                                                                    141 1e-33
gi|16758680|ref|NP_446280.1| (NM_053828) interleukin 13 [Ra...
                                                                  139 4e-33
                                                                   <u>61</u> 1e-09
gi|258577|gb|AAB23881.1| P600 homolog [human, Peptide, 49 aa]
gi | 451840 | gb | AAA61629.1 | (U05203) putative preprosperminoge...
                                                                   <u>31</u> 1.8
gi|16760873|ref|NP_456490.1| (NC_003198) flagellar transcri...
                                                                    31 1.8
                                                                    <u>30</u> 2.8
gi|7387658|sp|052222|FLHC_SALTY FLAGELLAR TRANSCRIPTIONAL A...
gi|16765266|ref|NP_460881.1| (NC_003197) regulator of flage...
                                                                     30 2.9
                                                                     30 3.6
gi | 14485571 | gb | AAK63010.1 | AF320026_1 (AF320026) heme oxygen...
                                                                   30 4.4
gi | 11466430 | ref | NP_038436.1 | (NC_002186) putative plastid d...
gi|1293576|gb|AAA98646.1| (U49765) immunoglobulin heavy cha...
                                                                    30 5.4
gi|15641617|ref|NP_231249.1| (NC_002505) conserved hypothet...
                                                                    29 8.0
```

Alignments

>gi|7528274|gb|AAF63204.1|AF244915_1 (AF244915) interleukin-13 [Canis familiaris] Length = 131

Score = 244 bits (622), Expect = 1e-64
Identities = 131/131 (100%), Positives = 131/131 (100%)

Query: 1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAG 60
MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAG
Sbjct: 1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAG 60

Query: 61 MYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTY 120

MYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTY

Sbjct: 61 MYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTY 120

Query: 121 VRGVYRHGNFR 131 VRGVYRHGNFR

Sbjct: 121 VRGVYRHGNFR 131

>gi | 14573528 | gb | AAK68108.1 | AF385625_1 (AF385625) interleukin-13 [Sus scrofa] gi | 14594692 | gb | AAK68109.2 | AF385626_1 (AF385626) interleukin-13 [Sus scrofa] Length = 131

Score = 179 bits (454), Expect = 4e-45Identities = 96/131 (73%), Positives = 108/131 (82%), Gaps = 3/131 (2%)

Query: 1 MALWLTVVIALTCLGGLASPSPVTPSPT-LKELIEELVNITQNQAS-LCNGSMVWSVNLT 58
MALWLT+VIALTC GGLASP PV P T LKELIEELVNITQNQ + LCNGSMVWSVNLT

Sbjct: 1 MALWLTLVIALTCFGGLASPGPVPPHSTALKELIEELVNITQNQKTPLCNGSMVWSVNLT 60

Query: 59 AGM-YCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNL 117
M YCAALESLIN+SDCSAIQ+TQRML ALCS KP + Q+ + RDTKIEV Q VK+L

Sbjct: 61 TSMQYCAALESLINISDCSAIQKTQRMLSALCSHKPPSEQVPGKHIRDTKIEVAQFVKDL 120

Query: 118 LTYVRGVYRHG 128

L ++R ++RHG

Sbjct: 121 LKHLRMIFRHG 131

>gi|2905620|gb|AAC03535.1| (AF043334) interleukin 13 precursor [Homo sapiens]

Length = 132

Score = 169 bits (428), Expect = 4e-42 Identities = 94/131 (71%), Positives = 105/131 (79%), Gaps = 1/131 (0%) Query: 1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTA 59 MAL LT VIALTCLGG ASP PV PS L+ELIEELVNITQNQ A LCNGSMVWS+NLTA Sbjct: 1 MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITQNQKAPLCNGSMVWSINLTA 60 Query: 60 GMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLT 119 GMYCAALESLINVS CSAI++TQRML C K +AGQ SS RDTKIEV Q VK+LL Sbjct: 61 GMYCAALESLINVSGCSAIEKTQRMLGGFCPHKVSAGQFSSLHVRDTKIEVAQFVKDLLL 120 Query: 120 YVRGVYRHGNF 130 +++ ++R G F Sbjct: 121 HLKKLFREGRF 131 >gi|4504645|ref|NP_002179.1| (NM_002188) interleukin 13 [Homo sapiens] gi|15297318|ref|XP_054534.1| (XM_054534) interleukin 13 [Homo sapiens] gi|15297320|ref|XP_054533.1| (XM_054533) hypothetical protein XP_054533 [Homo sapie gi | 16171723 | ref | XP_055221.1 | (XM_055221) hypothetical protein XP_055221 [Homo sapie ★ gi|462408|sp|P35225|IL13_HUMAN INTERLEUKIN-13 PRECURSOR (IL-13) gi|186276|gb|AAA36107.1| (L06801) interleukin 13 [Homo sapiens] gi | 673420 | emb | CAA48824.1 | (X69079) alternative; ATG at 15 is an alternative start c sapiens] gi|1045452|gb|AAB01681.1| (U31120) interleukin-13 precursor [Homo sapiens] gi|14091716|gb|AAK53823.1|AF377331_1 (AF377331) interleukin 13 [Homo sapiens] Length = 132Score = 169 bits (427), Expect = 5e-42Identities = 94/131 (71%), Positives = 105/131 (79%), Gaps = 1/131 (0%) MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTA 59 Query: 1 MAL LT VIALTCLGG ASP PV PS L+ELIEELVNITQNQ A LCNGSMVWS+NLTA MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITQNQKAPLCNGSMVWSINLTA 60 Sbjct: 1 Query: 60 GMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLT 119 GMYCAALESLINVS CSAI++TQRML C K +AGQ SS RDTKIEV Q VK+LL Sbjct: 61 GMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGQFSSLHVRDTKIEVAQFVKDLLL 120 Query: 120 YVRGVYRHGNF 130 +++ ++R G F Sbjct: 121 HLKKLFREGRF 131 >gi|2144691|pir||A47481 interleukin-13 precursor - human gi 580330 emb CAA48823.1 (X69079) alternative; ATG at 15 is an alternative start c sapiens] <u>gi|445575|prf||1909326A</u> interleukin 13 [Homo sapiens] Length = 146Score = 167 bits (424), Expect = 1e-41 Identities = 94/131 (71%), Positives = 105/131 (79%), Gaps = 1/131 (0%) Query: 1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTA 59 MAL LT VIALTCLGG ASP PV PS L+ELIEELVNITQNQ A LCNGSMVWS+NLTA Sbjct: 15 MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITQNQKAPLCNGSMVWSINLTA 74



Query: 60 GMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLT 119

GMYCAALESLINVS CSAI++TQRML C K +AGQ SS RDTKIEV Q VK+LL

Sbjct: 75 GMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAGQFSSLHVRDTKIEVAQFVKDLLL 134

Query: 120 YVRGVYRHGNF 130

+++ ++R G F

Sbjct: 135 HLKKLFREGRF 145

>gi | 7387804 | sp | Q9XSV9 | IL13_BOVIN INTERLEUKIN-13 PRECURSOR (IL-13) gi | 5420145 | emb | CAB46636.1 | (AJ132441) interleukin-13 [Bos taurus] Length = 132

Score = 161 bits (408), Expect = 8e-40
Identities = 87/131 (66%), Positives = 103/131 (78%), Gaps = 1/131 (0%)

Query: 1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTA 59
MAL LT VI L C GGL SPSPV + LKELIEELVNITQNQ LCNGSMVWS+NLT+

Sbjct: 1 MALLLTAVIVLICFGGLTSPSPVPSATALKELIEELVNITQNQKVPLCNGSMVWSLNLTS 60

Query: 60 GMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLT 119

MYCAAL+SLI++S+CS IQRT++ML ALC KP+A Q+SSE RDTKIEV Q +K+LL Sbjct: 61 SMYCAALDSLISISNCSVIQRTKKMLNALCPHKPSAKQVSSEYVRDTKIEVAQFLKDLLR 120

Query: 120 YVRGVYRHGNF 130 + R V+R+ F

Sbjct: 121 HSRIVFRNERF 131

>gi|1127548|gb|AAA83738.1| (U10307) interleukin 13 [Homo sapiens] Length = 131

Score = 160 bits (406), Expect = 1e-39Identities = 92/131 (70%), Positives = 103/131 (78%), Gaps = 2/131 (1%)

Query: 1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQAS-LCNGSMVWSVNLTA 59
MAL LT VIALTCLGG ASP PV PS L+ELIEELVNITQNQ LCNGSMVWS+NLTA

Sbjct: 1 MALLLTTVIALTCLGGFASPGPVPPSTALRELIEELVNITQNQKRPLCNGSMVWSINLTA 60

Query: 60 GMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLT 119 GMYCAALESLINVS CSAI++TQRML C K +AG SS RDTKIEV Q VK+LL

Sbjct: 61 GMYCAALESLINVSGCSAIEKTQRMLSGFCPHKVSAG-FSSLHVRDTKIEVAQFVKDLLL 119

Query: 120 YVRGVYRHGNF 130 +++ ++R G F

Sbjct: 120 HLKKLFREGRF 130

>gi|4558814|gb|AAD22748.1|AF072807_1 (AF072807) interleukin-13 precursor [Bos taurus Length = 114

Score = 146 bits (368), Expect = 3e-35
Identities = 81/113 (71%), Positives = 91/113 (79%), Gaps = 1/113 (0%)

Query: 1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTA 59
MAL LT VI L C GGL SPSPV + LKELIEELVNITQNQ LCNGSMVWS+NLT+

```
MALLLTAVIVLICFGGLTSPSPVPSATALKELIEELVNITQNQKVPLCNGSMVWSLNLTS 60
Sbjct: 1
Query: 60 GMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQ 112
           MYCAAL+SLI++S+CS IQRT+RML ALC KP+A Q+SSE RDTKIEV Q
Sbjct: 61 SMYCAALDSLISISNCSVIQRTKRMLNALCPHKPSAKQVSSEYVRDTKIEVAQ 113
>qi|6680403|ref|NP_032381.1| (NM_008355) interleukin 13 [Mus musculus]
 gi|129377|sp|P20109|IL13_MOUSE INTERLEUKIN-13 PRECURSOR (IL-13) (T-CELL ACTIVATION
 gi|91336|pir||E30552 T-cell activation protein P600 precursor - mouse
 gi | 533247 | gb | AAA40149.1 | (M23504) T cell secreted protein [Mus musculus]
          Length = 131
 Score = 143 bits (360), Expect = 3e-34
 Identities = 79/134 (58%), Positives = 98/134 (72%), Gaps = 7/134 (5%)
Ouery: 1
           MALWLTVVIALTCLGGLASPSPVTPSP----TLKELIEELVNITQNQASLCNGSMVWSVN 56
           MALW+T V+AL CLGGLA+P PV S
                                          TLKELIEEL NITQ+Q LCNGSMVWSV+
          MALWVTAVLALACLGGLAAPGPVPRSVSLPLTLKELIEELSNITODOTPLCNGSMVWSVD 60
Sbjct: 1
Query: 57 LTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKN 116
           L AG +C AL+SL N+S+C+AI RTQR+L LC++K A +SS
                                                           DTKIEV
Sbjct: 61 LAAGGFCVALDSLTNISNCNAIYRTQRILHGLCNRK-APTTVSS--LPDTKIEVAHFITK 117
Query: 117 LLTYVRGVYRHGNF 130
           LL+Y + ++RHG F
Sbjct: 118 LLSYTKQLFRHGPF 131
>gi|14719448|pdb|1GA3|A Chain A, Nmr Structure Of Interleukin-13
          Length = 113
 Score = 141 bits (355), Expect = 1e-33
 Identities = 77/110 (70%), Positives = 88/110 (80%), Gaps = 1/110 (0%)
Query: 22 PVTPSPTLKELIEELVNITQNQ-ASLCNGSMVWSVNLTAGMYCAALESLINVSDCSAIQR 80
           PV PS L+ELIEELVNITONO A LCNGSMVWS+NLTAGMYCAALESLINVS CSAI++
           PVPPSTALRELIEELVNITQNQKAPLCNGSMVWSINLTAGMYCAALESLINVSGCSAIEK 62
Sbjct: 3
Query: 81 TQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVKNLLTYVRGVYRHGNF 130
                   C K +AGQ SS
                                 RDTKIEV Q VK+LL +++ ++R G F
Sbjct: 63 TQRMLSGFCPHKVSAGQFSSLHVRDTKIEVAQFVKDLLLHLKKLFREGRF 112
>gi|16758680|ref|NP_446280.1| (NM_053828) interleukin 13 [Rattus norvegicus]
 gi|1170528|sp|P42203|IL13_RAT INTERLEUKIN-13 PRECURSOR (IL-13) (T-CELL ACTIVATION P
 gi|2118664|pir||152290 interleukin-13 - rat
 gi | 438876 | qb | AAA16478.1 | (L26913) interleukin-13 [Rattus norvegicus]
          Length = 131
 Score = 139 \text{ bits } (350), \text{ Expect} = 4e-33
 Identities = 79/134 (58%), Positives = 99/134 (72%), Gaps = 8/134 (5%)
```

MALWLTVVIALTCLGGLASPSPV----TPSPTLKELIEELVNITQNQ-ASLCNGSMVWSV 55

MALWVTAVLALACLGGLATPGPVRRSTSPPVALRELIEELSNITQDQKTSLCNSSMVWSV 60

L+ELIEEL NITO+Q SLCN SMVWSV

+P

MALW+T V+AL CLGGLA+P PV

Query: 1

Sbjct: 1

Query: 56 NLTAGMYCAALESLINVSDCSAIQRTQRMLKALCSQKPAAGQISSERSRDTKIEVIQLVK 115
+LTAG +CAALESL N+S C+AI RTQR+L LC+QK A ++S DTKIEV Q +
Sbjct: 61 DLTAGGFCAALESLTNISSCNAIHRTQRILNGLCNQK--ASDVASS-PPDTKIEVAQFIS 117

Query: 116 NLLTYVRGVYRHGN 129 LL Y + ++R+G+ Sbjct: 118 KLLNYSKQLFRYGH 131

>gi | 258577 | gb | AAB23881.1 | P600 homolog [human, Peptide, 49 aa]
Length = 49

Score = 61.2 bits (147), Expect = 1e-09Identities = 35/49 (71%), Positives = 36/49 (73%), Gaps = 1/49 (2%)

Query: 1 MALWLTVVIALTCLGGLASPSPVTPSPTLKELIEELVNITQNQ-ASLCN 48
MAL LT VIAL CLGG SP PV PS L+ELIEEL NITQ Q A LCN
Sbjct: 1 MALLLTTVIALACLGGFDSPGPVPPSTALRELIEELSNITQTQKAPLCN 49

>gi|451840|gb|AAA61629.1| (U05203) putative preprosperminogen [Oryctolagus cuniculus Length = 275

Score = 31.2 bits (69), Expect = 1.8 Identities = 21/71 (29%), Positives = 33/71 (45%), Gaps = 6/71 (8%)

Query: 16 GLASPSPVTPSPTLKELIEELVNITQNQASLCNGSMVWSVNLTAGMYCAALESLINVSDC 75 G + PSPTL E +L+N+ LCN + ++ +TA CA S + C Sbjct: 181 GYVKENAPRPSPTLMEARVDLINL----ELCNSTQWYNGRITASNLCAGYPSG-KIDTC 234

Query: 76 SAIQRTQRMLK 86 +Q+ +LK Sbjct: 235 QRLQQLVEVLK 245

>gi | 16760873 | ref | NP_456490.1 | (NC_003198) flagellar transcriptional activator [Salmo enterica subsp. enterica serovar Typhi]
gi | 16503170 | emb | CAD05675.1 | (AL627272) flagellar transcriptional activator [Salmone

subsp. enterica serovar Typhi]
Length = 194

Score = 31.2 bits (69), Expect = 1.8
Identities = 16/56 (28%), Positives = 26/56 (45%), Gaps = 3/56 (5%)

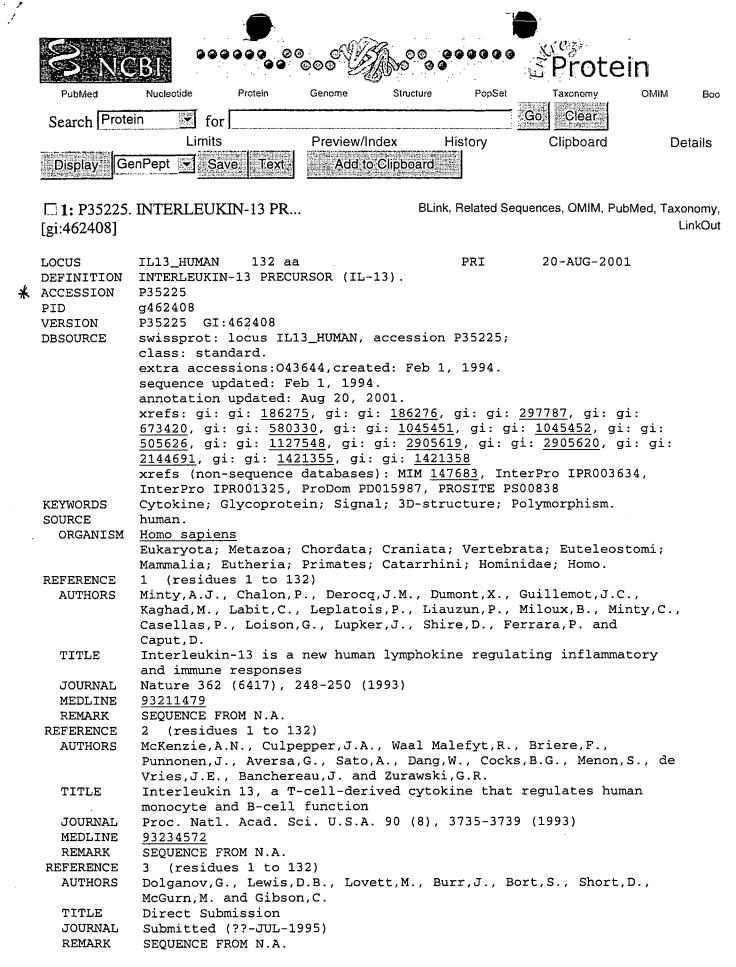
Query: 51 MVWSVNLTAGMYCAALESLINVSDCS---AIQRTQRMLKALCSQKPAAGQISSERS 103
M W N+ A M+C A + L+ CS A+ + R+ C Q P ++ R+
Sbjct: 67 MTWEQNIHASMFCNAWQFLLKTGLCSGVDAVIKAYRLYLEQCPQPPEGSLLALTRA 122

>gi | 7387658 | sp | 052222 | FLHC_SALTY | FLAGELLAR TRANSCRIPTIONAL ACTIVATOR FLHC
gi | 2772918 | gb | AAB96640.1 | (AF029300) | FlhC | [Salmonella typhimurium]
gi | 6045176 | dbj | BAA85315.1 | (D43640) | FlhC | protein | [Salmonella typhimurium]
Length = 192

Score = 30.4 bits (67), Expect = 2.8 Identities = 16/56 (28%), Positives = 26/56 (45%), Gaps = 3/56 (5%)

Sbjct: 44 ALECLGGVSGGGITDYNPALRSRLTIMKDDSKNQVSLSLSSV--TLEDTATYYCA 96

>gi|15641617|ref|NP_231249.1| (NC_002505) conserved hypothetical protein [Vibrio cho gi | 11354623 | pir | | C82178 conserved hypothetical protein VC1609 [imported] - Vibrio cholerae (group O1 strain N16961) gi | 9656121 | gb | AAF94763.1 | (AE004238) conserved hypothetical protein [Vibrio cholera Length = 408Score = 28.9 bits (63), Expect = 8.0Identities = 18/48 (37%), Positives = 27/48 (55%), Gaps = 4/48 (8%) Query: 2 ALWLTVVIALTCLGGLASPSPVTPSPTLKELIEE----LVNITQNQAS 45 V+ LT GG+ S + P P K++ E+VN+ Q+QAS Sbjct: 39 ALFTNPVVVLTVFGGVVFYSFLYPLPYAKQIPREQTVSVVNLDQSQAS 86 Database: nr Posted date: Nov 16, 2001 11:40 PM Number of letters in database: 254,026,857 Number of sequences in database: 799,241 Lambda K 0.319 0.131 0.381 Gapped Lambda K Η 0.267 0.0410 0.140 Matrix: BLOSUM62 Gap Penalties: Existence: 11, Extension: 1 Number of Hits to DB: 60,265,884 Number of Sequences: 799241 Number of extensions: 1930804 Number of successful extensions: 5801 Number of sequences better than 10.0: 32 Number of HSP's better than 10.0 without gapping: 17 Number of HSP's successfully gapped in prelim test: 15 Number of HSP's that attempted gapping in prelim test: 5767 Number of HSP's gapped (non-prelim): 32 length of query: 131 length of database: 254,026,857 effective HSP length: 107 effective length of query: 24 effective length of database: 168,508,070 effective search space: 4044193680 effective search space used: 4044193680 T: 11 A: 40 X1: 16 (7.4 bits) X2: 38 (14.6 bits) X3: 64 (24.7 bits) S1: 41 (21.8 bits) S2: 63 (28.9 bits)



```
45
    Region
                     /region_name="Conflict"
                     /note="A -> R (IN REF. 4)."
    Bond
                     bond (48,76)
                     /bond_type="disulfide"
    Site
                     /site_type="glycosylation"
                     /note="N-LINKED (GLCNAC...) (POTENTIAL)."
    Site
                     /site_type="glycosylation"
                     /note="N-LINKED (GLCNAC...) (POTENTIAL)."
    Bond
                     bond (64,90)
                     /bond_type="disulfide"
    Site
                     72
                     /site_type="glycosylation"
                     /note="N-LINKED (GLCNAC...) (POTENTIAL)."
    Region
                     /region_name="Conflict"
                     /note="S -> G (IN REF. 5)."
    Region
                     /region_name="Conflict"
                     /note="MISSING (IN REF. 4)."
                     130
    Region
                     /region_name="Variant"
                     /note="R -> Q. /FTId=VAR_010037."
ORIGIN
        1 malllttvia ltclggfasp gpvppstalr elieelvnit qnqkaplcng smvwsinlta
       61 gmycaalesl invsgcsaie ktqrmlsgfc phkvsagqfs slhvrdtkie vaqfvkdlll
      121 hlkklfregr fn
//
```

Revised: October 24, 2001.

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